Rapid Bioassessment in Wadeable Streams and Rivers by Volunteer Monitors

Instructions

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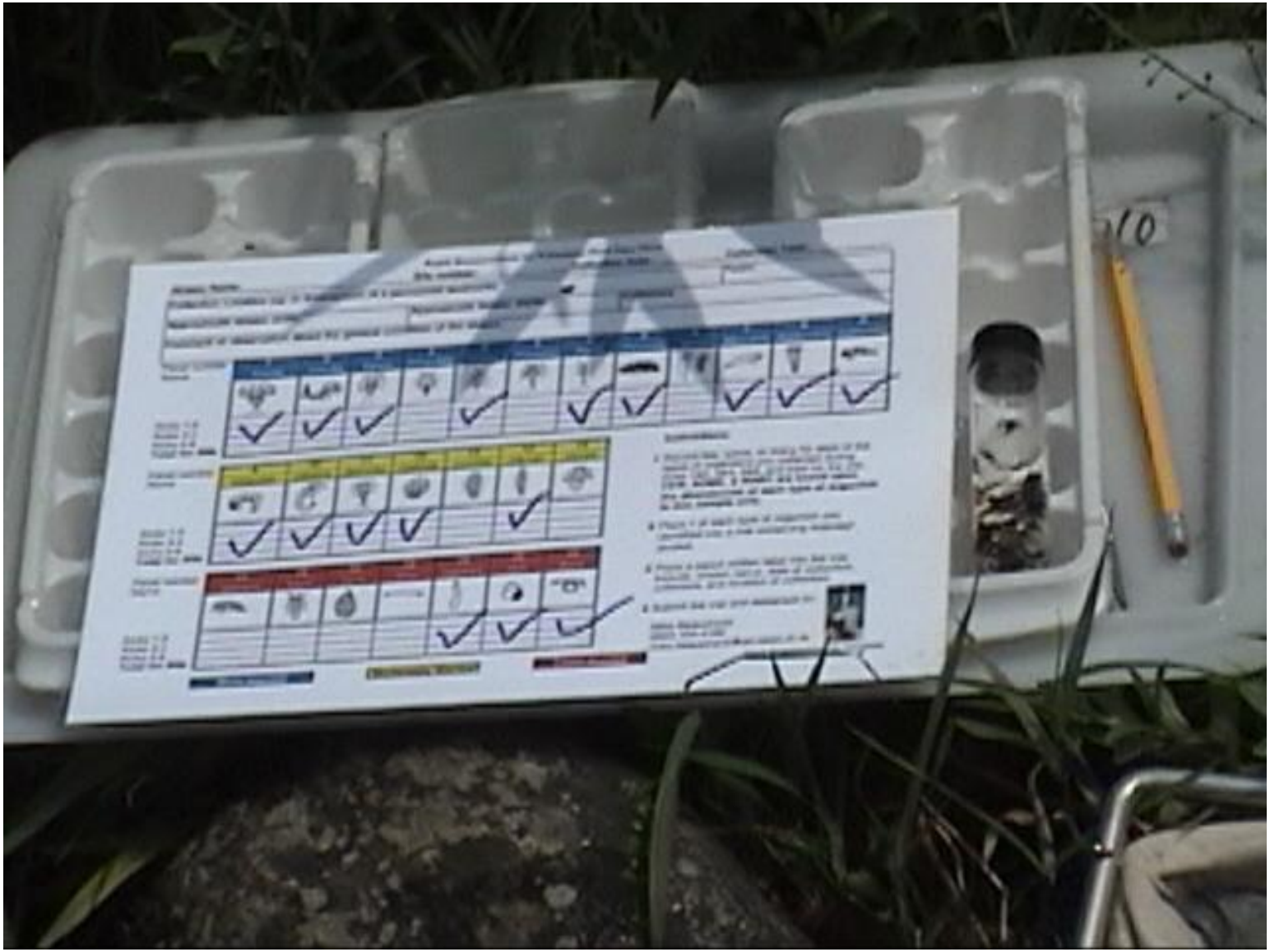
v. 2006

THE BOTTOM LINE



Overview of Procedure

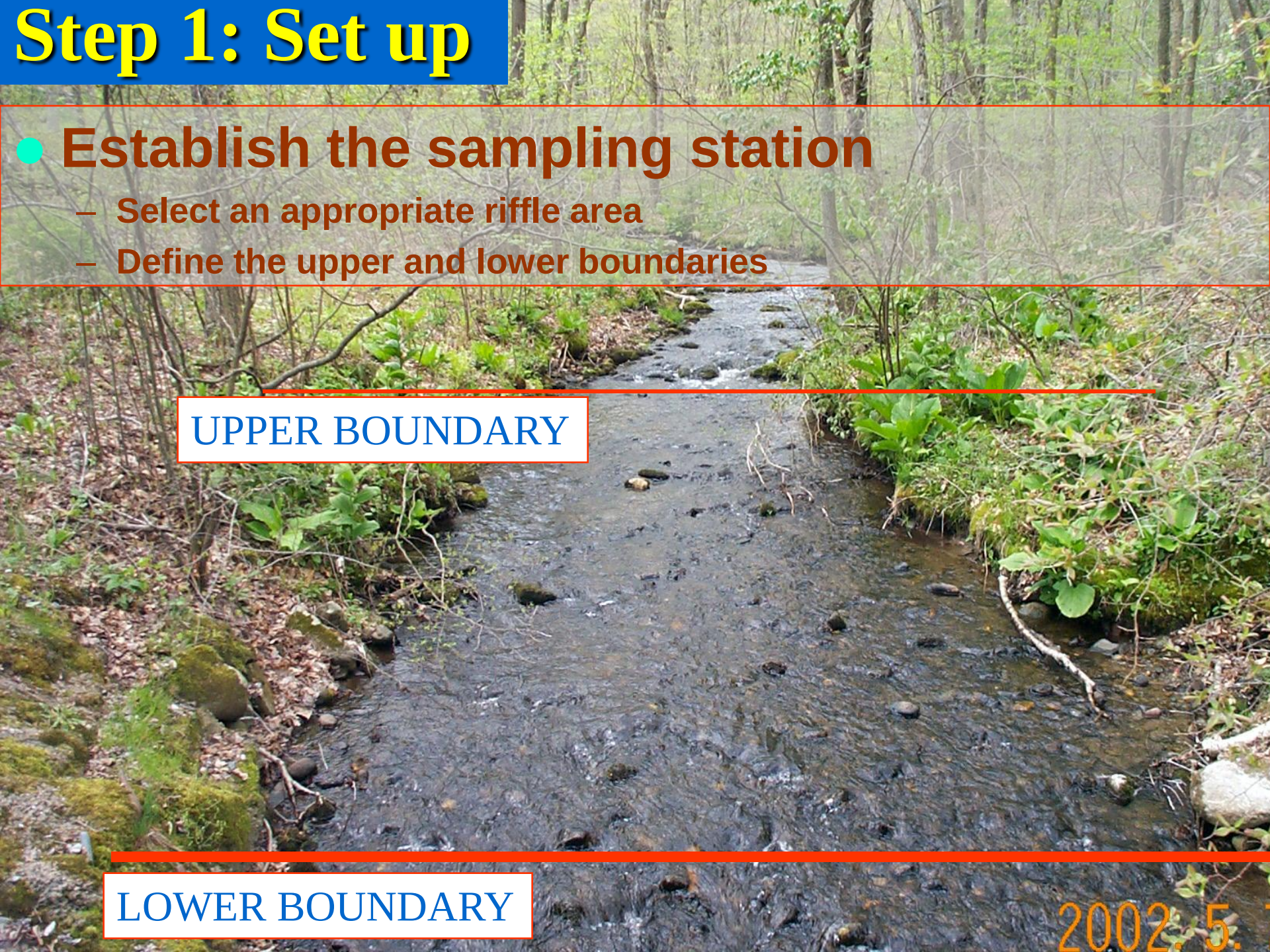
- **Site selection (set up)**
- **Collect (scrub & kick)**
- **Process (observe & Sort)**
- **Identify**
- **Voucher**
- **Submit**
- **Congratulations**

Step 1: Set up

- **Establish the sampling station**
  - **Select an appropriate riffle area**

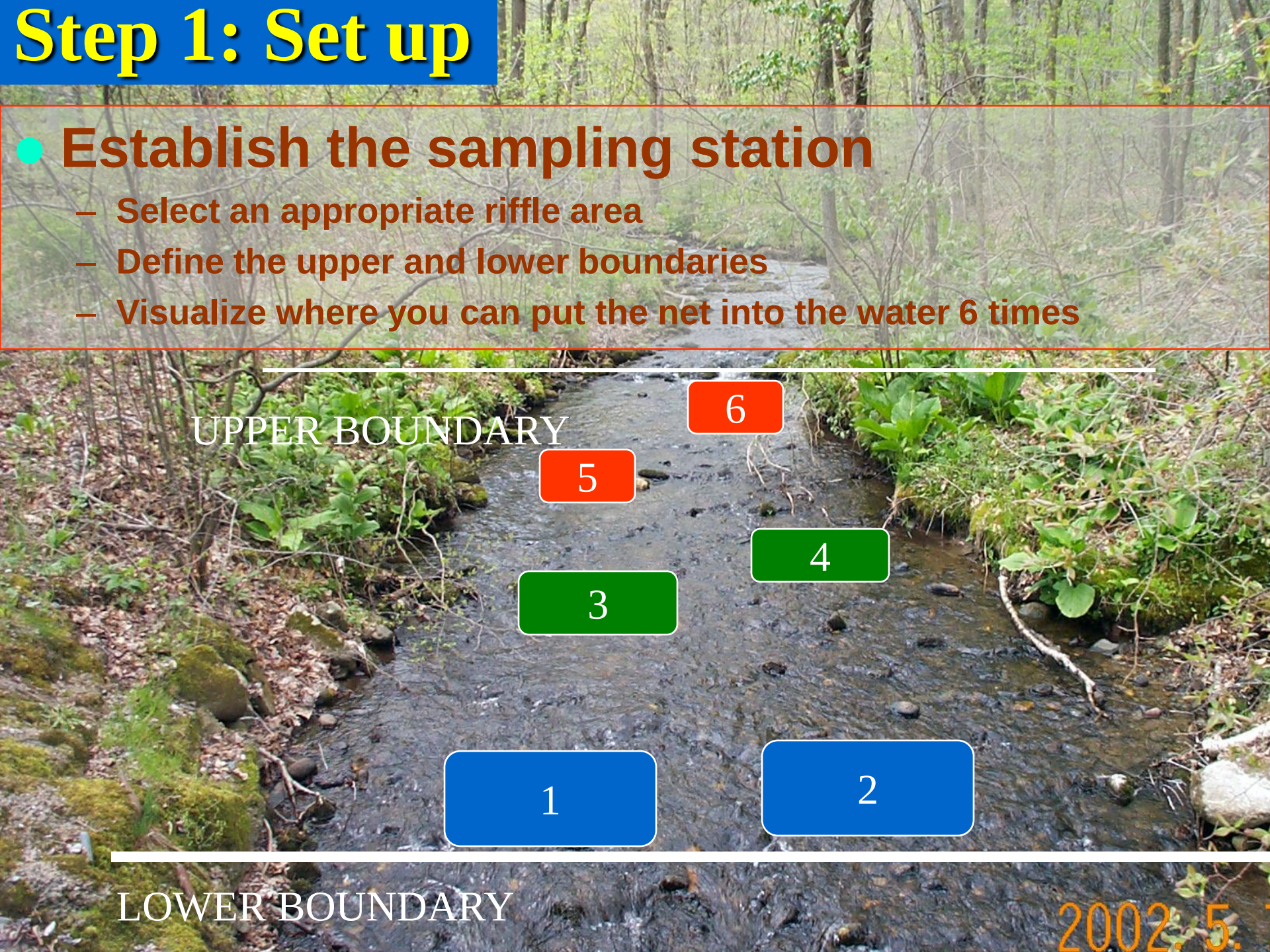
Step 1: Set up

- **Establish the sampling station**
  - Select an appropriate riffle area
  - Define the upper and lower boundaries



Step 1: Set up

- **Establish the sampling station**
  - Select an appropriate riffle area
  - Define the upper and lower boundaries
  - Visualize where you can put the net into the water 6 times



Step 2: Collect

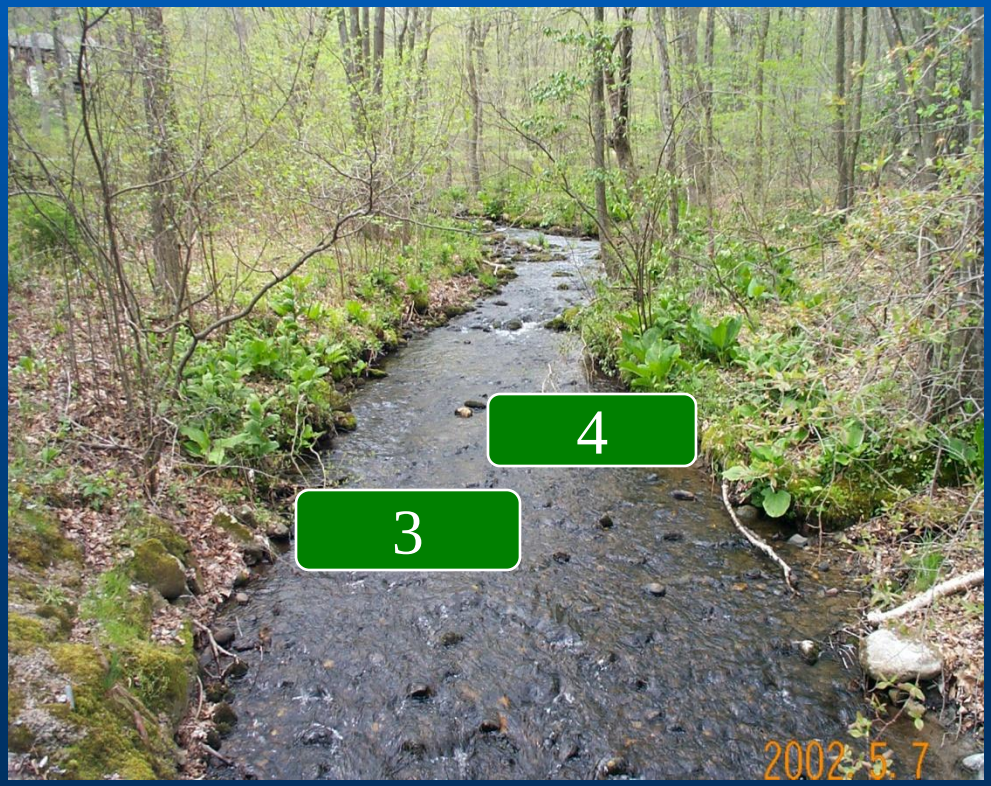
Collect Samples from Locations 1 & 2

DUMP CONTENTS OF KICKS 1&2 INTO TRAY A

Step 2: Collect

Collect Samples from Locations 1 & 2

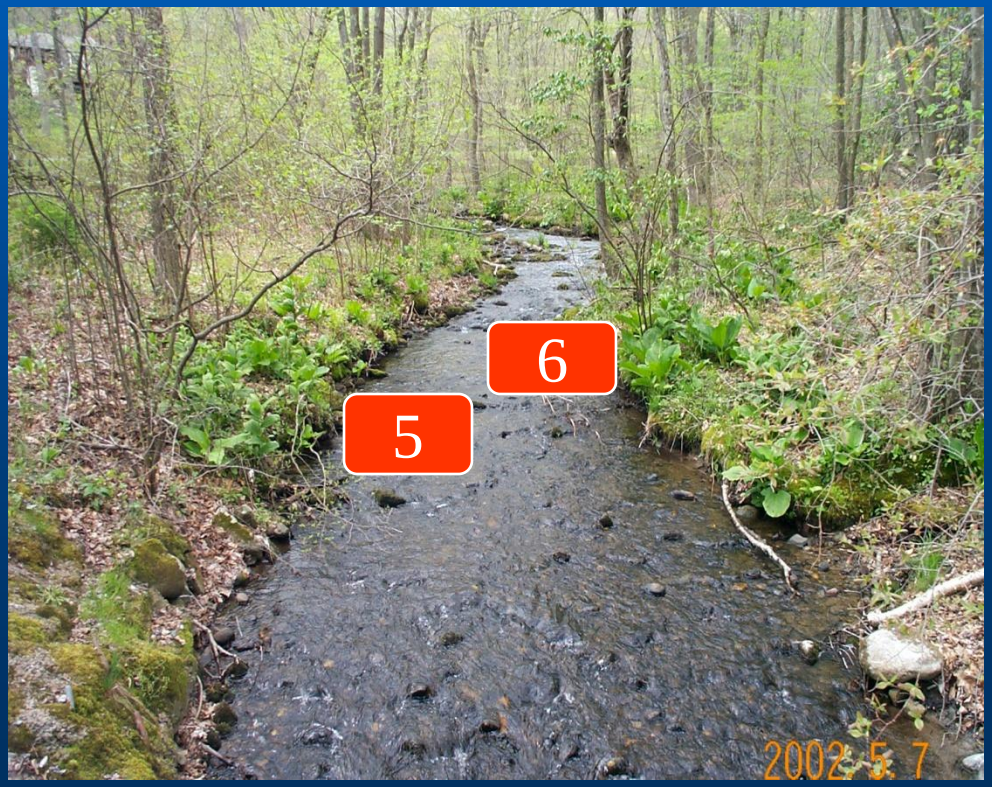
DUMP CONTENTS OF KICKS 3&4 INTO TRAY B



Step 2: Collect

Collect Samples from Locations 1 & 2

DUMP CONTENTS OF KICKS 5&6 INTO TRAY C



Step 2: Collect

The sample collection is complete when there are 3 trays each with the contents from 2 locations

6

5

4

3

1

2

Step 3: Process the sample

Pick out large debris from each tray and sort by like types into Ice cube tray

Step 3: Process the sample

Processing is complete when you have found as many of the different types as possible and put representatives of each type into the ice cube trays

Step 4= Identify

Rapid Bioassessment for Volunteers Kick Sample

Note: This chart is for preliminary sorting purposes when implementing RAPID BIOASSESSMENT FOR VOLUNTEER MONITORS. This chart is not intended to produce definitive identification of aquatic macroinvertebrates. It was designed to complement a series of field identification cards and the RBV data sheet. Additional information about the RBV program is available at http://dep.state.ct.us/wtr/volunmon/volopp.htm or by contacting Mike Beauchene at (860-424-4185) mike.Beauchene@po.state.ct.us

*Drawings represent the approximate maximum size of each organism.

Is the Organism Wide or Flat & Have Medium to Large Legs?

3 Long Thin Tails

Panel 1: Drunella (Mayfly)

Panel 2: Isonychia (Mayfly)

Panel 11: Stenonema (Mayfly)

Panel 14: Odonata (Damselfly)

2 Long Thin Tails

Panel 3: Epeorus (Mayfly)

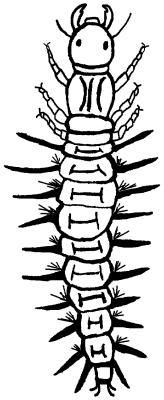
Panel 4: Peltoperlidae (Stonefly)

Panel 5A: Perlidae (Stonefly)

Panel 5B: Pteronarycs (Stonefly)

Panel 5C: Misc. Stoneflies

0 Long Thin Tails



Panel 14: Odonata (Dragonfly)

Panel 13B: Nigronia (Fishfly)

Panel 15A: Amphipod

Panel 13A: Corydalus (Dobsonfly)

Panel 15B: Isopod

Is the organism Round or Cylindrical & Have Small or No Legs?

Hidden Legs

Panel 12: Psephenus (Water Penny Beetle)

With Legs

Builds a Shelter/Case

Panel 6A: Glossosoma (Caddisfly)

Panel 6B: Apatania (Caddisfly)

Panel 8A Brachycentrus (Caddisfly)

Panel 8B Lepidostoma (Caddisfly)

No Shelter/Case

Panel 7: Rhyacophia (Caddisfly)

Panel 9: Hydropsychidae (Caddisfly)

Panel 10: Chimarra (Caddisfly)

Without Legs

Panel 15C: Leech

Panel 15D: Midge Larva

Panel 15E: Black Fly Larva

Panel 15F: Snail

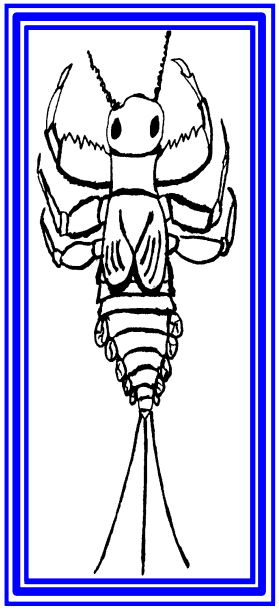
Panel 15G: Worm

PANEL # 1

BODY-BUILDER MAYFLY

Genus *Drunella*
Family Ephemerellidae
Order Ephemeroptera

Ecological Information
Tolerance Value = 0
Feeding Group = Scraper



Key features to look for:

- ☐ First section of the front legs look like muscular biceps.
- ☐ Front legs have a serrated edge.
- ☐ Flat body with obvious legs.
- ☐ 3 tails at the end of the abdomen.
- ☐ Single set of wing pads.
- ☐ Small round gills on the sides of the abdomen.

Key behaviors to look for:

- ☐ This mayfly nymph will crawl among leaves, stones, and other debris in the tray.
- ☐ Occasionally it may swim by slowly undulating back and forth.

Points of Note:

This organism can be confused with other members of the same family. These mayflies can be very abundant under appropriate conditions. The defining feature of this organism is the enlarged front legs with a serrated edge.

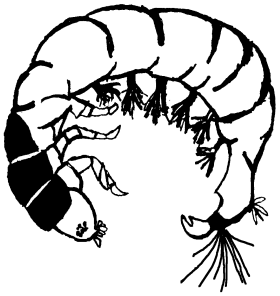
MOST WANTED

PANEL # 9

COMMON NET-SPINNER

Family Hydropsychidae
Order Trichoptera

Ecological Information
Tolerance Value = 4
Feeding Group = Collector-filterer



Key features to look for:

- ☐ Worm-like body.
- ☐ Dark colored sometimes greenish body.
- ☐ Two paint brush-like tails at the end of the abdomen.
- ☐ Fluffy gills on the underside of the abdomen.
- ☐ Dirty or hairy appearance (sometimes).
- ☐ Two hooks at the end of the abdomen.
- ☐ Dark plate above each pair of legs.

Key behaviors to look for:

- ☐ Extremely active, wiggles violently back and forth.
- ☐ Gregarious, will form clumps of 2-4 in the tray.
- ☐ **MAY CLING STRONGLY TO THE NET**

Points of Note:

This is probably one of the most common organisms encountered during benthic sampling. These can be extremely abundant under appropriate conditions. Because some are greenish in color they may be confused as *Rhyacophila*. Hydropsychidae have a dark plate above each pair of legs and fluffy gills on the underside of the abdomen, *Rhyacophila* do not. The tiny filtering nets of this organism can be observed on and between substrate.

MODERATELY WANTED

Step 4: Identify

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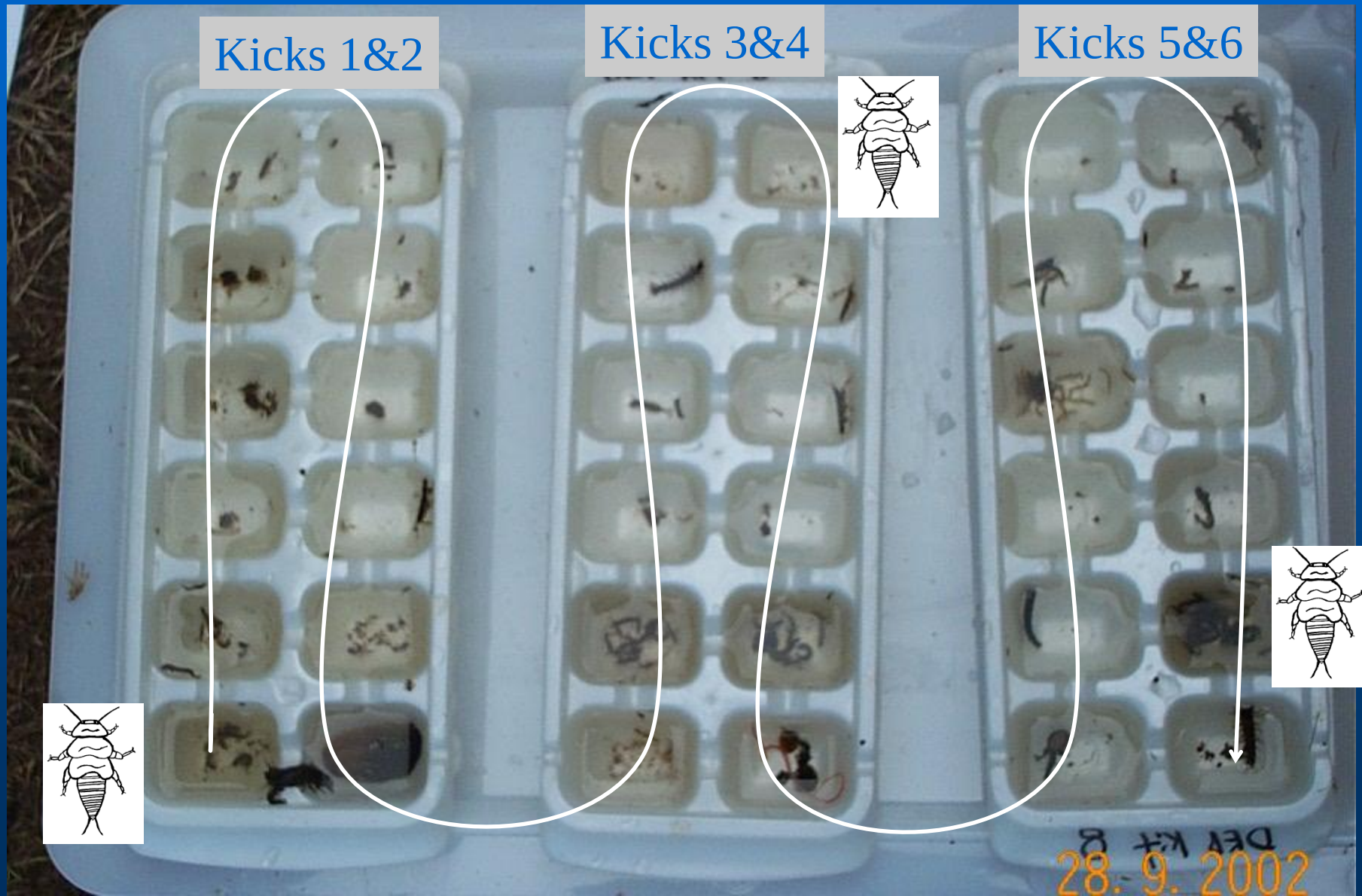
Start with the one ice cube well and weave your way through



Step 4: Identify

Step 4: Identify

Fill in datasheet

Kicks 1&2 | Kicks 3&4 | Kicks 5&6

LOCATION DESCRIPTION:				COLLECTION DATE:		COLLECTION TIME:	
TOWN:			NOTES/COMMENTS:	COLLECTORS NAMES:			
MOST	1 Body builder mayfly Drunella	2 Minnow mayfly Isonychia	3 2-tailed flat head mayfly Epeorus	4 Roach-like stonefly Peltoperlidae	5A Common stonefly Perlidae	5 B Giant stonefly Pteronarcys	5 C Misc Stonefly
Locs 1&2							
Locs 3&4							
Locs 5&6							

MOST	6A Saddle-Case caddis Glossosoma	6 B Cornucopia Case caddis Apatania	7 Michelin Man caddis Rhyacophila	8A Mid-size plant case caddis Brachycentrus	8 B Lepidostoma	DATA INTERPRETATION # OF TYPES OF THE "MOST"	WATER QUALITY
						5 OR MORE	EXCEPTIONAL
						3 TO 4	EXCELLENT
Locs 1&2						1 TO 3	VERY GOOD
Locs 3&4							
Locs 5&6						0	MORE INFO NEEDED TO ASSESS

MODERATE	9 Common net-spinner Hydropsychidae	10 Fingernet Caddis Chimarra	11 Flat Head mayfly Stenonema	12 Water Penny Psephenus	13 A Dobsonfly Corydalus	13 B Fishfly Nigronia	14 Dragonfly & Damselfly Odonata
Locs 1&2							
Locs 3&4							
Locs 5&6							

LEAST	15 A Amphipod	15 B Isopod	15 C Leech	15 D Midge	15 E Black fly	15 F Snail	15 G Worm
Locs 1&2							
Locs 3&4							

Step 5: Voucher

A voucher is at least 1 of each different type of organisms collected at the site. In addition a label written in pencil with date, stream, collectors, and location is placed inside. The voucher **is the data**. Each voucher is verified by CT DEP.

If it is not in the voucher it does not exist

Play it safe- when in doubt add one in

Label voucher with pencil and info:

Date: 10/01/2015

Stream: Mike's Brook

Location: Upstream Main Street

6

5

4

3

1

2

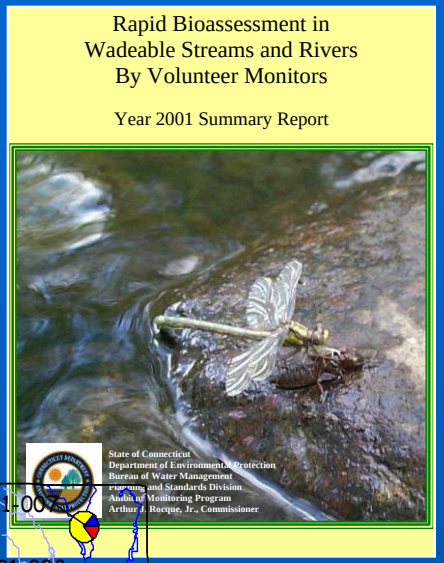
Step 6: Submit the Data

Mike Beauchene

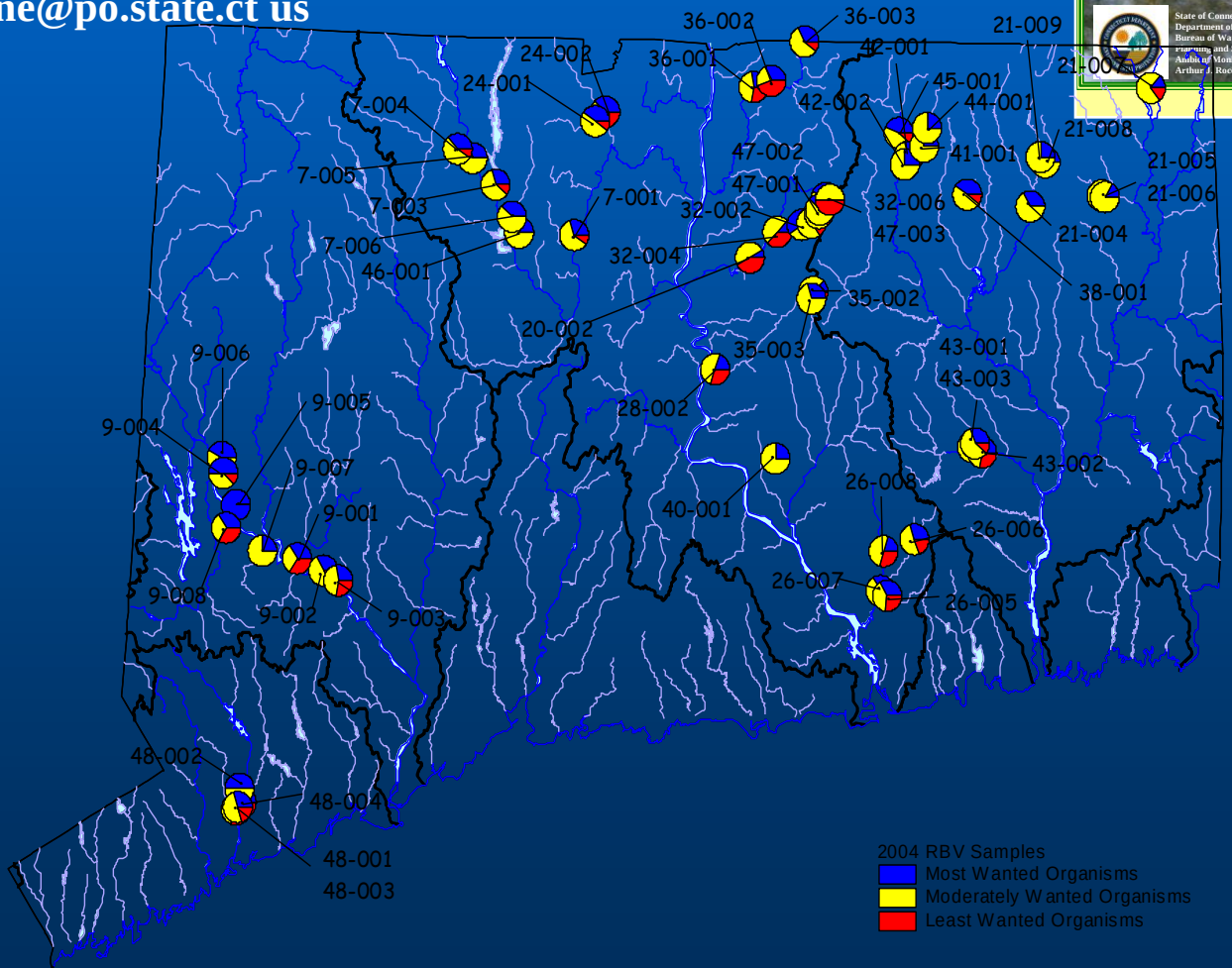
Volunteer Monitoring Coordinator

(860) 424-4185

mike.beauchene@po.state.ct us



Percent composition of each RBV category for samples collected during the fall of 2004. (collector id - site number)




SAFETY FIRST

SAFETY FIRST

ACCESS TO THE STREAM

PARKING/TRAFFIC

STEEP BANKS

POISION IVY/PRICKER BUSHES

ANGRY LANDOWNERS

SAFETY FIRST

WADING IN THE STREAM

SLIPPERY ROCKS

FAST FLOW

DEEP SPOTS

COLD WATER

COLLECTING THE ORGANISMS

HIDDEN SHARP DEBRIS

GLASS

METAL

OTHER

Major Sources of Disappointment

POOR COLLECTION

POOR VOUCHER

Not Getting a good Voucher

-Poor sorting due to too much material &/or muddied water

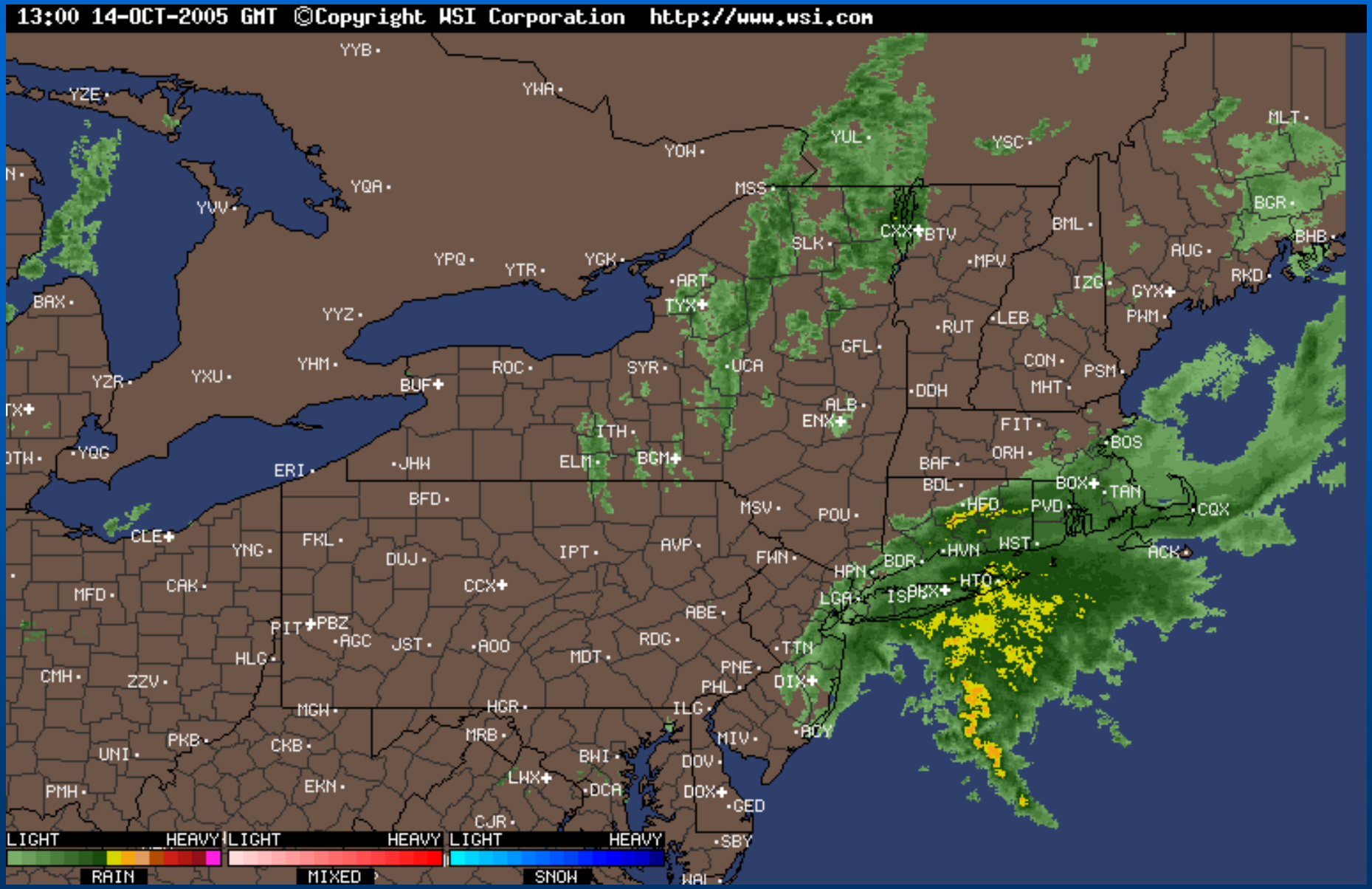
-Rushed sorting due to nuisance insects, rain, snow, hunger, other commitments

-Thinking someone else put one in already

-Not using enough alcohol

-Not labeling or using pen on your label


09/21/2005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LIGHT
HEAVY
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MIXED
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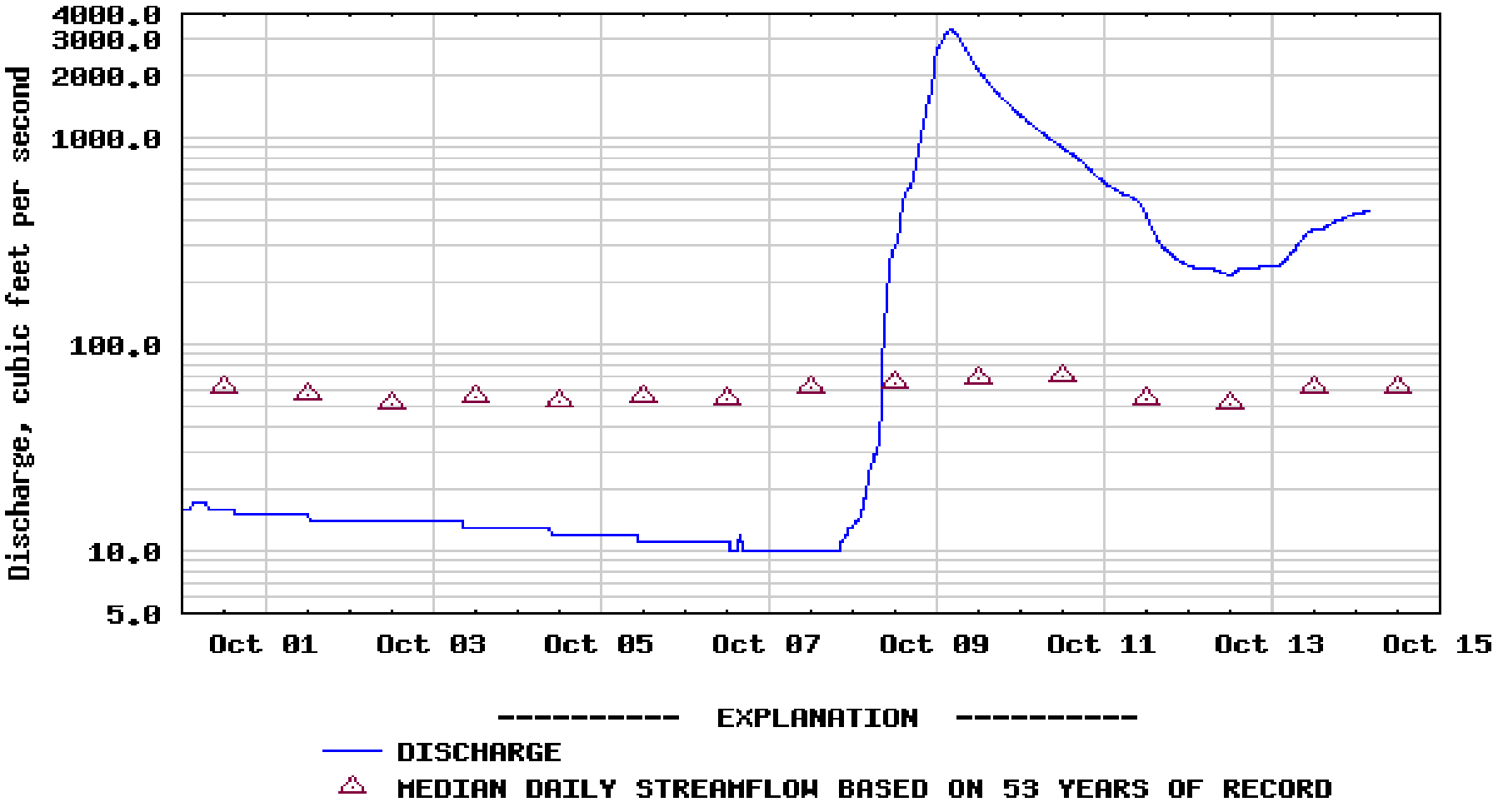
USGS

USGS 01186500 STILL RIVER AT ROBERTSVILLE, CT.



Provisional Data Subject to Revision